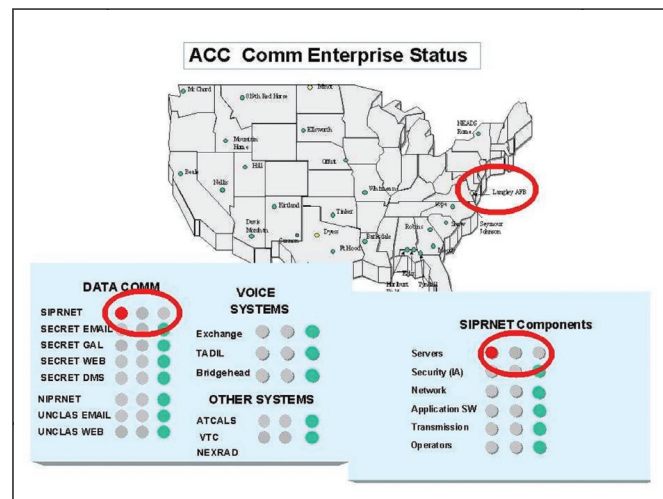# Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

AIR FORCE COMMUNICATIONS ENTERPRISE MANAGEMENT SYSTEM

The Information Directorate's Air Force Communications Enterprise Management (ACEM) system provides a tool to display high-level status of the entire communications enterprise, the overall status of a mission's communications enterprise, and the communications status for each of the mission's functional areas. The ACEM manages data networks (routers, servers, hosts) and communications systems that are not network-aware such as flight line systems, transmission systems, and switching systems (voice/video switches, multiplexers, fiber and wireline systems, radios and radio nets, satellite communication systems).

This Web-enabled software system provides visibility into the communications enterprise for any level of interest. The ACEM alleviates the current "stove piping" of communications management and control tools by taking status information from these tools, consolidating and translating the information, and presenting overall communications status in an operational context, thus allowing personnel to know the operational impact of communications faults and attacks.

Accomplishment

ACEM builds comprehensive enterprise awareness by collecting information from existing tools as well as directly from information provider (IP) devices when needed and from non-IP devices. ACEM's decision support function then allows the translation of this pool of technical data into relevant, mission-oriented views that are scalable from a Major Command perspective to a functional support concern (Logistics) and even to an individual unit's area of interest.

The ACEM provides situational awareness of the entire communications enterprise and translates technical status information into a view of each organization's (Operations, Headquarters, Medical, Support) communications health. This allows prioritized restoration of service and the best possible quality of service.

An ACEM server can obtain specific technical status information from each communications management tool and combine that with other ACEM status information to determine and present communications enterprise status in an operational, mission-oriented context. The ACEM objective is to allow anyone from the commander to the shift worker to access the communications status and the operational impact of faults and attacks.

Background

The ACEM completed an operational demonstration at the Air Combat Command Network Operations Security Center, where it received and translated status information from the unclassified but sensitive Internet Protocol Router Network, the secret Internet Protocol Router Network, and non-IP devices. Currently, the directorate is integrating ACEM with the Multi-Domain Network Manager (MDNM), the Master Caution Panel (MCP), and the AF Enterprise Defense (AFED) to form the Command and Control Enterprise Management System (C2EMS).

The MDNM builds an integrated network management capability across multiple security domains (unclassified, secret, top secret, sensitive compartmented information, coalition). MCP provides situational awareness of command centers and application programs. The AFED provides intrusion detection and network defense. The C2EMS will provide situational awareness of the status of the entire C2 enterprise.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-IF-03)